JOURNAL

of the

New England Water Works Association

VOLUME LXXVII

1963

Published by

THE NEW ENGLAND WATER WORKS ASSOCIATION

73 Tremont Street, Boston 8, Mass.

The four numbers composing this volume
have been separately copyrighted in 1963
by the New England Water Works Association

AUTHOR INDEX

Addivinola, Frank J. Urban Renewal's Effect on the Water System of the City of Boston. 183, June.

Babcock, Russell H. Butterfly Valves for Modulating Control. 266, Sept.

Bampton, Norman. Problems in Conversion of Municipal Supply from Surface to Ground Water. 119, June.

Birgel, Warren J. The E-M Ampli-Speed Drive and Its Application to Variable Speed Pumping. 61, Mar.

Chase, E. Sherman. Report on 1962 Meetings of the Institution of Water Engineers and the British Waterworks Association. 106, June.

Christensen, Wilfred. Legislation on Water Resources in Denmark. 99, June.

Cobb, D. M. Control Instrumentation at Reading, Mass., Filter Plant. 193, Sept.

Collins, John J., Jr. Recent Improvements at the Providence Water Purification Works, Scituate, Rhode Island. 230, Sept.

Croker, Mark F., and Charles H. Connors. Booster Pumping into a Closed System at the City of Newton's Underground Pumping Station. 139, June.

Disken, Roger P. Design Criteria for Lowell's New Water Supply and Water Treatment Plant. 245, Sept.

Howard, Myles F. Merrimack River Pipe Crossing. 263, Sept.

Lamprey, Gerald H. Cathodic Protection of Storage Tanks in New England. 308, Dec.

Maginnis, John J. Civil Defense in Massachusetts: A Status Report. 1, Mar.

Malnati, C. Gerard. Architectural Aspects of Lowell Project. 249, Sept.

Matera, Francis V. Trend of Liberal Interpretation of Public Contracts by Our Courts. 51, Mar.

McDonnell, George H. Planning the Expansion of the City of Holyoke Water Works. 205, Sept.

McEachern, Paul. The Hydro-Constant Fluid Drive System. 33, Mar.

Minkus, Alexander J. The Chemical Treatment Plant of the Metropolitan District Water Bureau. 23, Mar.
Mogg, Joe L. The Technical Aspects of Gravel Well Construction. 155, June.
Monie, W. D. Safeguarded Automatic Chlorine Dosage Control for the Portland Water District. 165, June.
Osgood, G. M. Flomatcher as Used with Variable-Speed Pumps. 76, Mar.
Perkins, Howard R. Structural Design Features of Lowell Project. 251, Sept.
Peterson, William C. Lowell Treatment Plant Operation. 254, Sept.
Pittendreigh, Lorrin M. Use of Chemical Injection Wells to Suppress Biologic Activity and to Stabilize Iron and Manganese in Ground Waters. 35, Mar.
Rogers, Sherman L. The New Shops and Yard of the Metropolitan District Water Bureau. 16, Mar.
Shea, Walter J. Portrait. *Frontispiece,* Mar.; Presidential Address. 321, Dec.
Soule, Ralph M. Water Supply as Related to Nuclear Attack. 10, Mar.
Sterling, Clarence I., Jr. Exploring Areas of Bewilderment in Water Resources. 222, Sept.
Sylvester, James G. Welding Procedures — Erection and Repair of Steel Water-Storage Structures. 295, Dec.
Taggart, E. J. Automatic Valveless Gravity Filter. 112, June.
Taylor, Worthen H. Approval of the Use of Merrimack River as a Source of Water Supply. 239, Sept.
Tierney, Edward J. Lowell's Need for a New Water Supply. 242, Sept.
Toole, Harold J. The Metropolitan District Commission Northern Extra High Service Pumping Station, Spring Street, Arlington, Massachusetts. 147, June.
Wurts, William A. D. Functions of Management in Water Supply. 86, Mar.

SUBJECT INDEX

Ampli-Speed Drive and Its Application to Variable Speed Pumping, The E-M. By Warren J. Birgel. 61, Mar.

Approval of the Use of Merrimack River as a Source of Water Supply. By Worthen H. Taylor. 239, Sept.

Architectural Aspects of Lowell Project. By C. Gerard Malnati. 249, Sept.

Arlington, Massachusetts, The Metropolitan District Commission Northern Extra High Service Pumping Station, Spring Street. By Harold J. Toole. 147, June.

Automatic Valveless Gravity Filter. By E. J. Taggart. 112, June.

Biologic Activity and to Stabilize Iron and Manganese in Ground Waters, Use of Chemical Injection Wells to Suppress. By Lorrin M. Pittendreigh. 35, Mar.

Book Review: Water Supply Engineering (Sixth Edition). By Babbitt, Doland and Cleasby. 290, Sept.

Booster Pumping into a Closed System at the City of Newton's Underground Pumping Station. By Mark F. Croker and Charles H. Connors. 139, June.

Boston, Urban Renewal's Effect on the Water System of the City of. By Frank J. Addivinola. 183, June.

British Waterworks Association, Report on 1962 Meetings of the Institution of Water Engineers and the. By E. Sherman Chase. 106, June.

Butterfly Valves for Modulating Control. By Russell H. Babcock. 266, Sept.

Cathodic Protection of Storage Tanks in New England. By Gerald H. Lamprey. 308, Dec.

Chemical Injection Wells to Suppress Biologic Activity and to Stabilize Iron and Manganese in Ground Waters, Use of. By Lorrin M. Pittendreigh. 35, Mar.

Chemical Treatment Plant of the Metropolitan District Water Bureau, The. By Alexander J. Minkus. 23, Mar.

Chlorine Dosage Control for the Portland Water District, Safeguarded Automatic. By W. D. Monie. 165, June.

Civil Defense in Massachusetts; A Status Report. By John J. Maginnis. 1, Mar.

Contracts by Our Courts, Trend of Liberal Interpretation of Public. By Francis V. Matera. 51, Mar.
Control Instrumentation at Reading, Mass., Filter Plant. By D. M. Cobb. 193, Sept.
Conversion of Municipal Supply from Surface to Ground Water, Problems in. By Norman Bampton. 119, June.
Courts, Trend of Liberal Interpretation of Public Contracts by Our. By Francis V. Matera. 51, Mar.
Denmark, Legislation on Water Resources in. By Wilfred Christensen. 99, June.
Design Criteria for Lowell's New Water Supply and Water Treatment Plant. By Roger P. Disken. 245, Sept.
Exploring Areas of Bewilderment in Water Resources. By Clarence I. Sterling, Jr. 222, Sept.
Filter, Automatic Valveless Gravity. By E. J. Taggart. 112, June.
Filter Plant, Control Instrumentation at Reading, Mass. By D. M. Cobb. 193, Sept.
Flomatcher as Used with Variable-Speed Pumps. By G. M. Osgood. 76, Mar.
Fluid Drive System, The Hydro-Constant. By Paul McEachern. 33, Mar.
Functions of Management in Water Supply. By William A. D. Wurts. 86, Mar.
Gravel Well Construction, The Technical Aspects of. By Joe L. Mogg. 155, June.
Gravity Filter, Automatic Valveless. By E. J. Taggart. 112, June.
Ground Water, Problems in Conversion of Municipal Supply from Surface to. By Norman Bampton. 119, June.
Ground Waters, Use of Chemical Injection Wells to Suppress Biologic Activity and to Stabilize Iron and Manganese in. By Lorrin M. Pittendreigh. 35, Mar.
Holyoke Water Works, Planning the Expansion of the City of. By George H. McDonnell. 205, Sept.
Hydro-Constant Fluid Drive System, The. By Paul McEachern. 33, Mar.
Institution of Water Engineers and the British Waterworks Association, Report on 1962 Meetings of the. By E. Sherman Chase. 106, June.

Iron and Manganese in Ground Waters, Use of Chemical Injection Wells to Suppress Biologic Activity and to Stabilize. By Lorrin M. Pittendreigh. 35, Mar.
Legislation on Water Resources in Denmark. By Wilfred Christensen. 99, June.
Liberal Interpretation of Public Contracts by Our Courts, Trend of. By Francis V. Matera. 51, Mar.
Lowell Project, Architectural Aspects of. By C. Gerard Malnati. 249, Sept.
Lowell Project, Structural Design Features of. By Howard R. Perkins. 251, Sept.
Lowell's Need for a New Water Supply. By Edward J. Tierney. 242, Sept.
Lowell's New Water Supply and Water Treatment Plant, Design Criteria for. By Roger P. Disken. 245, Sept.
Lowell Treatment Plant Operation. By William C. Peterson. 254, Sept.
Management in Water Supply, Functions of. By William A. D. Wurts. 86, Mar.
Massachusetts: A Status Report, Civil Defense in. By John J. Maginnis. 1, Mar.
Merrimack River as a Source of Water Supply, Approval of the Use of. By Worthen H. Taylor. 239, Sept.
Merrimack River Pipe Crossing. By Myles F. Howard. 263, Sept.
Metropolitan District Commission-Northern Extra High Service Pumping Station, Spring Street, Arlington, Massachusetts, The. By Harold J. Toole. 147, June.
Metropolitan District Water Bureau, The Chemical Treatment Plant of the. By Alexander J. Minkus. 23, Mar.
Metropolitan District Water Bureau, The New Shops and Yard of the. By Sherman L. Rogers. 16, Mar.
New England, Cathodic Protection of Storage Tanks in. By Gerald H. Lamprey. 308, Dec.
New England Water Works Association.
Administrative Reports:
Committee on Committees. 342, Dec.
Committee on Scholarship Fund, 340, Dec.

Editor, 355, Dec.
Finance Committee, 338, Dec.
Membership Committee, 341, Dec.
Secretary, 326, Dec.
Treasurer, 330, Dec.
Commemorative Award, 319, Dec.
Committees of the Association, 390, Dec.
Dexter Brackett Memorial Award, 318, Dec.
Election of Officers, 325, Dec.
Memoir of William W. Brush, 186, June.
Presidential Address, 321, Dec.
Proceedings:
November 1962 Meeting. 96, Mar.
December 1962 Meeting. 97, Mar.
January 1963 Meeting. 189, June.
February 1963 Meeting. 190, June.
March 1963 Meeting. 191, June.
April 1963 Meeting. 292, Sept.
May 1963 Meeting. 293, Sept.
Annual Convention. 315, Dec.
Reports of Technical Committees:
Cast-Iron Pipe and Fittings. 352, Dec.
Code for Pressure Piping. 354, Dec.
Corrosion and Its Effects on Water Quality. 389, Dec.
Gate Valves for Ordinary Water Works Service. 379, Dec.
Hydrant Specifications. 377, Dec.
Legislation. 344, Dec.
Rainfall and Yield of Drainage Areas. 276, Sept.
Specifications for Steel Pipe. 375, Dec.
Standardization of Pipe Flanges and Fittings. 376, Dec.
Water-Works Safety Practice. 381, Dec.
New Shops and Yard of the Metropolitan District Water Bureau, The. By Sherman L. Rogers. 16, Mar.
Newton's Underground Pumping Station, Booster Pumping into a Closed System at the City of. By Mark F. Croker and Charles H. Connors. 139, June.

Northern Extra High Service Pumping Station, Spring Street, Arlington, Massachusetts, The Metropolitan District Commission. By Harold J. Toole. 147, June.

Nuclear Attack, Water Supply as Related to. By Ralph M. Soule. 10, Mar.

Pipe Crossing, Merrimack River. By Myles F. Howard. 263, Sept.

Planning the Expansion of the City of Holyoke Water Works. By George H. McDonnell. 205, Sept.

Portland Water District, Safeguarded Automatic Chlorine Dosage Control for the. By W. D. Monie. 165, June.

Problems in Conversion of Municipal Supply from Surface to Ground Water. By Norman Bampton. 119, June.

Providence Water Purification Works, Scituate, Rhode Island, Recent Improvements at the. By John J. Collins, Jr. 230, Sept.

Pumping into a Closed System at the City of Newton's Underground Pumping Station, Booster. By Mark F. Croker and Charles H. Connors. 139, June.

Pumping Station, Spring Street, Arlington, Massachusetts, The Metropolitan District Commission Northern Extra High Service. By Harold J. Toole. 147, June.

Pumping, The E-M Ampli-Speed Drive and Its Application to Variable Speed. By Warren J. Birgel. 61, Mar.

Pumps, Flomatcher as Used with Variable-Speed. By G. M. Osgood. 76, Mar.

Reading, Mass., Filter Plant, Control Instrumentation at. By D. M. Cobb. 193, Sept.

Recent Improvements at the Providence Water Purification Works, Scituate, Rhode Island. By John J. Collins, Jr. 230, Sept.

Registration of Well Drillers. 188, June.

Report on 1962 Meetings of the Institution of Water Engineers and the British Waterworks Association. By E. Sherman Chase. 106, June.

Safeguarded Automatic Chlorine Dosage Control for the Portland Water District. By W. D. Monie. 165, June.

Scituate, Rhode Island, Recent Improvements at the Providence Water Purification Works. By John J. Collins, Jr., 230, Sept.

Shops and Yard of the Metropolitan District Water Bureau, The New. By Sherman L. Rogers. 16, Mar.

Steel Water-Storage Structures, Welding Procedures — Erection and Repair of. By James G. Sylvester. 295, Dec.

Storage Tanks in New England, Cathodic Protection of. By Gerald H. Lamprey. 308, Dec.

Structural Design Features of Lowell Project. By Howard R. Perkins. 251, Sept.

Surface to Ground Water, Problems in Conversion of Municipal Supply from. By Norman Bampton. 119, June.

Tanks in New England, Cathodic Protection of Storage. By Gerald H. Lamprey. 308, Dec.

Technical Aspects of Gravel Well Construction, The. By Joe L. Mogg. 155, June.

The Chemical Treatment Plant of the Metropolitan District Water Bureau. By Alexander J. Minkus. 23, Mar.

The E-M Ampli-Speed Drive and Its Application to Variable Speed Pumping. By Warren J. Birgel. 61, Mar.

The Hydro-Constant Fluid Drive System. By Paul McEachern. 33, Mar.

The Metropolitan District Commission Northern Extra High Service Pumping Station, Spring Street, Arlington, Massachusetts. By Harold J. Toole. 147, June.

The New Shops and Yard of the Metropolitan District Water Bureau. By Sherman L. Rogers. 16, Mar.

The Technical Aspects of Gravel Well Construction. By Joe L. Mogg. 155, June.

Treatment Plant Operation, Lowell. By William C. Peterson. 254, Sept.

Trend of Liberal Interpretation of Public Contracts by Our Courts. By Francis V. Matera. 51, Mar.

Urban Renewal's Effect on the Water System of the City of Boston. By Frank J. Addivinola. 183, June.

Use of Chemical Injection Wells to Suppress Biologic Activity and to Stabilize Iron and Manganese in Ground Waters. By Lorrin M. Pittendreigh. 35, Mar.

Valves for Modulating Control, Butterfly. By Russell H. Babcock. 266, Sept.
Variable Speed Pumping, The E-M Ampli-Speed Drive and Its Application to. By Warren J. Birgel. 61, Mar.
Variable-Speed Pumps, Flomatcher as Used with. By G. M. Osgood. 76, Mar.
Water Purification Works, Scituate, Rhode Island, Recent Improvements at the Providence. By John J. Collins, Jr. 230, Sept.
Water Resources, Exploring Areas of Bewilderment in. By Clarence I. Sterling, Jr. 222, Sept.
Water Resources in Denmark, Legislation on. By Wilfred Christensen. 99, June.
Water-Storage Structures, Welding Procedures — Erection and Repair of Steel. By James G. Sylvester. 295, Dec.
Water Supply and Water Treatment Plant, Design Criteria for Lowell's New. By Roger P. Disken. 245, Sept.
Water Supply, Approval of the Use of Merrimack River as a Source of. By Worthen H. Taylor. 239, Sept.
Water Supply as Related to Nuclear Attack. By Ralph M. Soule. 10, Mar.
Water Supply, Functions of Management in. By William A. D. Wurts. 86, Mar.
Water Supply, Lowell's Need for a New. By Edward J. Tierney. 242, Sept.
Water System of the City of Boston, Urban Renewal's Effect on the. By Frank J. Addivinola. 183, June.
Water Treatment Plant, Design Criteria for Lowell's New Water Supply and. By Roger P. Disken. 245, Sept.
Water Works, Planning the Expansion of the City of Holyoke. By George H. McDonnell. 205, Sept.
Welding Procedures — Erection and Repair of Steel Water-Storage Structures. By James G. Sylvester. 295, Dec.
Well Construction, The Technical Aspects of Gravel. By Joe L. Mogg. 155, June.
Well Drillers, Registration of. 188, June.